# F·A·A·M facility for airborne atmospheric measurements

## FLIGHT FOLDER

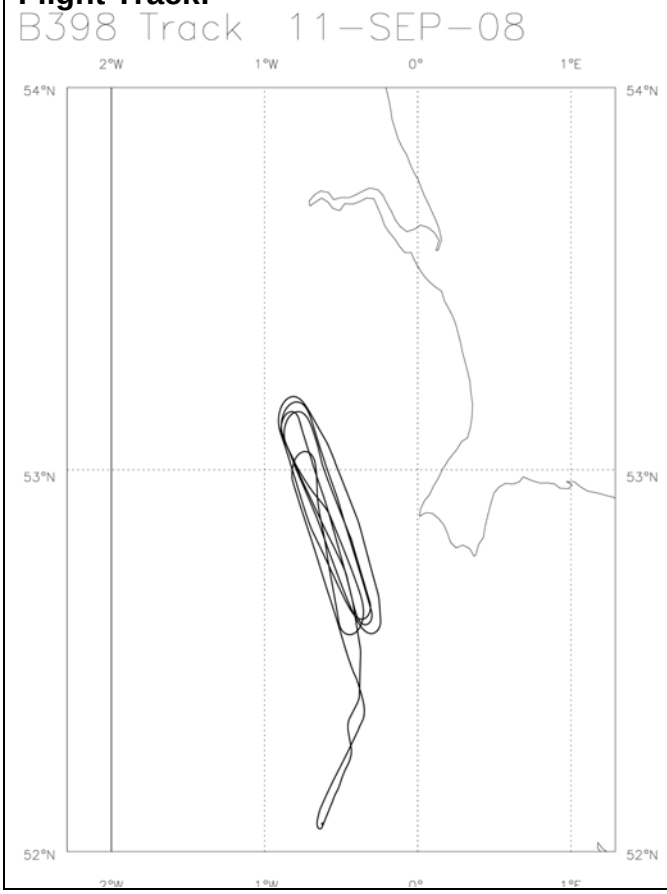

| | |
|---|---|
| Flight No. | B398 |
| Date: | 11 Sep 2008 |
| Take Off: | 07:55:59 |
| Landing: | 09:45:31 |
| Flight Time | 1h 49m 32s |

**Campaign:** TOFAMS (CPI Test) Flight

**Operating Area:** North Norfolk and the Wash

| POB | Position | Name | Institute | Logs y/n |
|---|---|---|---|---|
| 1 | Captain | Luc Lathouwers | Directflight | |
| 2 | Co-pilot | Alan Foster | Directflight | |
| 3 | CCM1 | Dawn Quinn | Directflight | |
| 4 | Mission Scientist | Jon Taylor | Met Office | y |
| 5 | Flight Manager | Alan Woolley | FAAM | Y |
| 6 | Cloud Physics 2 / CCM2 | Kate Turnbull | FAAM | Y |
| 7 | Cloud Physics | Martyn Pickering | Met Office | |
| 8 | CPI | James Dorsey | University of Manchester | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |

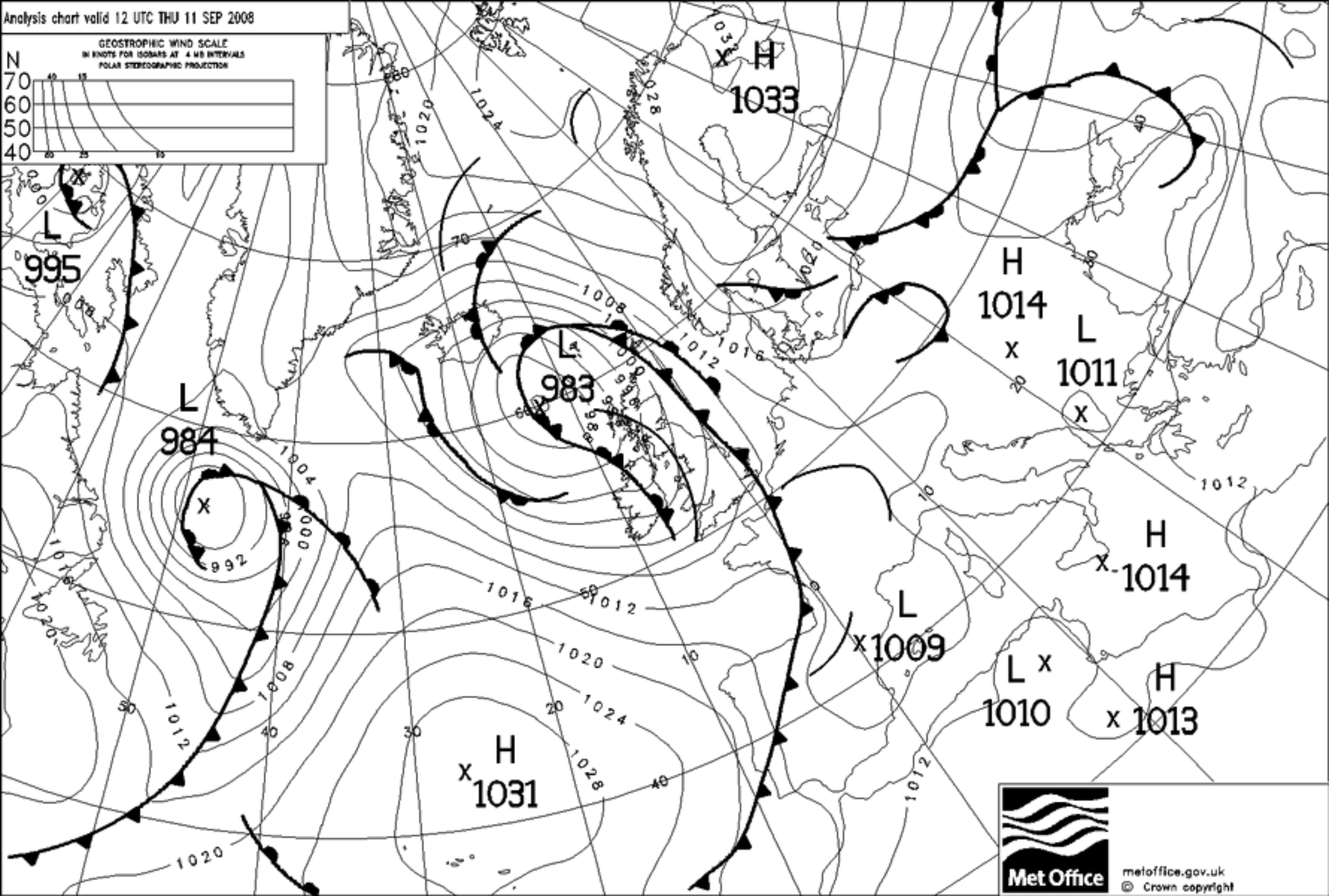
**Flight Track:**



FLIGHT SUMMARY

Flight No B398
Date: 11/9/08
Project: TOFAMS (CPI Test) test
Location: The Wash

| Start Time | End Time | Event | Height (s) | Hdg | Comments |
|---|---|---|---|---|---|
| 074542 | | engine start | 0.58 kft | 113 | |
| 074727 | | power change | 0.58 kft | 113 | |
| 074924 | | taxy | 0.57 kft | 113 | |
| 074958 | | asp open | 0.57 kft | 067 | |
| 075559 | | T/O | 0.57 kft | 211 | |
| 080332 | 081801 | Profile 1 | 10.0 - 23.9 kft | 326 | |
| 082109 | 082236 | Profile 2 | 23.9 - 22.5 kft | 323 | |
| 082237 | 090144 | Run 1.1 | 22.5 kft | 321 | |
| 090629 | 091643 | Run 2.1 | 11.5 kft | 158 | |
| 091822 | 093443 | Run 3.1 | 10.0 kft | 318 | |
| 094531 | | Land | 0.55 kft | 212 | at Cranfield |


Analysis chart valid 12 UTC THU 11 SEP 2008
GEOSTROPHIC WIND SCALE
IN KNOTS FOR ISOBARS AT 4 MB INTERVALS
POLAR STEREOGRAPHIC PROJECTION
N
70
60
50
40
40
15
65
25
10
L
995
L
984
992
L
983
H
1033
H
1014
L
1011
H
1014
L
1009
L
1010
H
1013
H
1031
1000
1004
1008
1012
1016
1020
1024
1028
Met Office
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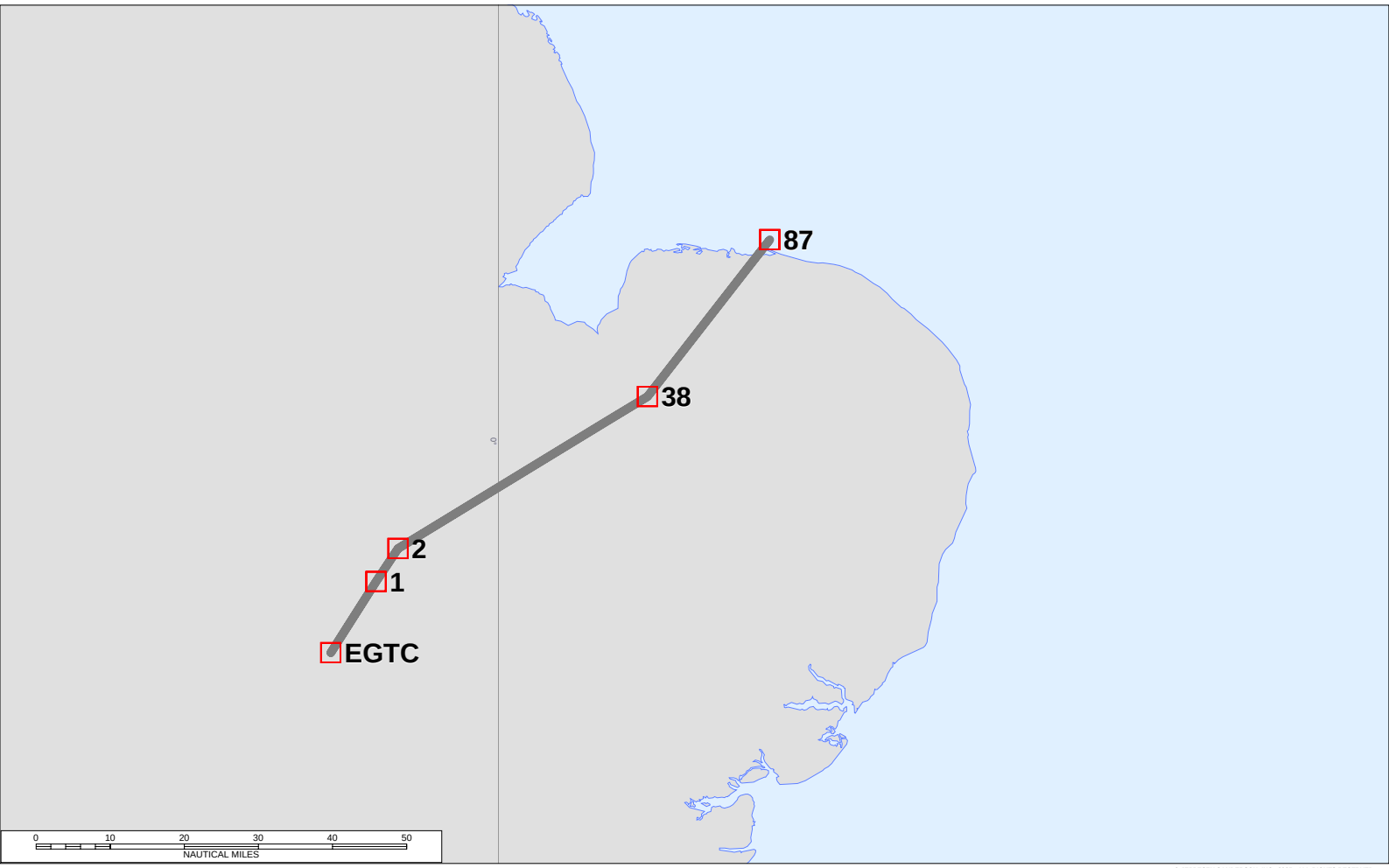
# B398 Track 11-SEP-08



**Sortie Brief: CPI-test flight**
**Date: 11 Sept 2008**
**Flight Number: B398**
**TO time: 09.00z (duration 2 hours)**
**M.Sci: Jon Taylor**

**Sortie Aims:** To carry out a full airborne test of the CPI instrument in liquid, mixed phase and ice cloud on a number of straight and level runs (SLRs) at different altitudes. In previous APPRAISE-cloud missions in Germany during EUCAARI, the probe failed to work properly when airborne, but seemed to have no obvious faults when run on the ground. The probe has been serviced in Manchester and needs testing with an experienced operator before the C-check. If any problems are encountered this will enable the probe to be returned to the manufacturer for fixing before the APPRAISE-clouds December/January/February flying period, where it is a priority instrument.

**Sortie Location:** North Norfolk and the Wash.

**Sortie Summary:** Perform a series of straight and level runs at a series of altitudes (and hence temperatures) within cloud, so that ice phase, mixed phase and liquid cloud are sampled. A profile up through cloud can be used to identify the cloud phases and so be used to determine suitable SLR altitudes. There should be full interaction between CPI operator and Mission Scientist so as to maximise the test flight objectives.

**Sortie Detail:**

a) T+0 Take off & climb to FL100 to transit to operating area.
b) Carry out a profile within cloud up to FL280.
c) Carry out a SLR at FL280 for 10minutes
d) Descend to FL250 and carry out a 10minute SLR at FL250.
e) Descend to FL220 and carry out a 10minute SLR at FL220
f) Descend to FL190 and carry out a 10minute SLR at FL190
g) Descend to FL160 and carry out a 10minute SLR at FL160
h) Descend to FL130 and carry out a 10minute SLR at FL130
i) Descend to transit altitude and return to Cranfield.

**NB. The number of SLRs and their altitudes can be adjusted to fit in with the time constraints of the 2 hour flight, and to fit in with the cloud conditions encountered.**

**Key instruments and their operation**

- Core Cloud Physics, CPI and 2DS, SP2.

**B399 Sortie debrief**

**Date** : 11th Sep 2008

**Mission Scientist** : Jon Taylor

This flight was to test the performance of the CPI probe following problems in Eucarri. The flight took place in the North Sea where an extensive layer of mixed phase and ice cloud was studied. The CPI was found to work perfectly well.

Alts & cloud sought
FL115
FL200
FL225

# Aircraft Scientist's Log

J. Taylor.

Flight No **B**398 Date 11 SEP 08 Page 1 of 2



| GMT | Run / Profile | Height | Hdg | GPS Position | Remarks (clouds, weather, visibility, winds, sea state etc.) |
|---|---|---|---|---|---|
| 075557 | | | | | Take Off |
| | | | | | cld base 1000ft } all water |
| | | | | | Tops 6500ft } |
| 080332 | P1 | FL100 | 327 | | Bright |
| 080519 | | FL115 | | | In some cld ~T ~0deg C |
| 080957 | | | | | turn right in clear sky on reciprocal |
| | | | | | track - In clear slot between |
| | | | | | cld layer at FL115 and higher layer. |
| 081215 | P1 | FL188 | 175 | | Pull out continue ascent. |
| 081401 | P1 | FL200 | | | CPI small ice + falling aggregates |
| | | | | | T= -18.9C |
| | | | | | Patchy cld at FL200 |
| 0816 | P1 | FL225 | | | In to cloud again T= -22°C. |
| | | | | | Small water drops. |
| 081801 | P1 | FL240 | | | Interrupt P1 air hopper / ends P1. |
| 082109 | P2↓ | FL260 | | | Start P2 |
| | | FL230 | | | Small water/ice from CPI |
| 082237. | P2/P1 | FL225 | | | Ends P2 + starts Run |
| | | | | | Some ice accretion on pylons |
| | | | | | T= -21.76°C Td = -18.7C(?) |
| | | | | | ~~cont 266~~ / |
| | | | | | large aggregates + big water -2D |
| | | | | | seeing same. -CPI |
| 082858 | | FL225 | | | less big water now - on both probes |
| 083249 | P1 | FL225 | | | back in big water / mixed phase T= -21.7 |

# Aircraft Scientist's Log

Miss Sci: Jen Taylor

Flight No **B**398 Date 11 SEP 08 Page 2 of 2

FAAM © 2004

| GMT | Run / Profile | Height | Hdg | GPS Position | Remarks (clouds, weather, visibility, winds, sea state etc.) |
|---|---|---|---|---|---|
| 083509 | R1 | FL225 | 161 | 52°36'N 1°6'W | Out of cld at South Eastern end of run |
| | | | | | T = -21.8C |
| 083920 | R1 | FL225 | 324 | | large ice ~1000µm |
| | | | | | Both probes getting good data at |
| 084132 | | | | | this altitude. Large range of ice types/sizes |
| | | | | | plus liq water. |
| 084233 | R1 | FL225 | | | out of cld at NW end of run. |
| | | | | | |
| | | FL225 | 147 | | Still in cloud mixed phase T = -21.4°C |
| 084806 | R1 | FL225 | 156 | | Out of cloud. |
| 085533 | R1 | FL225 | 315 | | Turn on reciprocal at same alt. |
| | | | | | T = -22C Td = -26.8C |
| 090163 | R1 | FL225 | | | End of Run 1 descend now to get |
| | | | | | in to liq water cloud. |
| | | FL115 | | | End of descent. |
| 090629 | R2 | FL115 | 158 | | Start of Run 2 |
| | | | | | Mainly liq water but some large columns |
| | | | | | falling through. T = -0.66°C |
| 091043 | R2.1 | FL115 | 161° | | Out of cld at SE end of run |
| 091643 | R2.1 | | | | End R2.1 descend to get into thicker cloud. |
| 091822 | R3.1 | FL100 | | | Start Run 3.1 T = 2.3C. |
| | | | | | in and out of liq water clouds. |
| | | | | | CPI working well, behaves that malfunction |
| | | | | | prompted flight may have been previous |
| | | | | | operator problem. |
| 0927 | | | | | Out of cld |
| 0929 | | | | | In cld T = +1.7C |
| 093643 | End of scene – recover to Cranfield | | | | |

# CLOUD PHYSICS PROCESSING LOG

**Flight number:** **B398** **T/O:** 07:55:59
**Date of flight:** 11/09/08 **Land:** 09:45:31

| **A) FFSSP PROCESSING** DONE IN EXETER | | |
|---|---|---|
| Processing Stage | Done? | Comments |
| 1) Transfer *.txt files from DVD to processing PC | | |
| Bnnn_FFSSP_hh.txt for each hour of data<br>Bnnn_FFSSP_HVMS.txt | | **hh =**<br>**Last sec processed =** |
| 2) FTP the files (ascii) from the PC to directory PMSDATA: on FLOODS | | **File size =** |
| 3) FLOODS> **RUN MRFB:[PMS.FAST_FSSP]FSSP_EXTRACT_TAS**<br>a) Flight number: **Bnnn**<br>b) Path name: **MFDDATA:Bnnn_MFDX**<br>c) Output directory: **PMSDATA:**<br>d) Start time: *0 if unknown (see comment box)*<br>e) End time: *240000 if unknown* | | Use time just before/after take-off/landing. If T/O /landing just after/before the hour, ensure start/end time is before/after the hour if there is an FFSSP_hh.txt file for that hour. |
| 4) FLOODS> **RUN MRFB:[PMS.FAST_FSSP]FFSSP_PROCESS_TXT**<br>a) Flight number: **Bnnn**<br>b) Directory: **PMSDATA:**<br>c) TAS in processing: **Y**<br>d) Vel threshold (clicks) **0**<br>e) Calibration file: *Use the most recent calibration file.*<br>Format FFSSP_CALddmmyyyy.txt<br>Calibration files to be stored in MRFB:[PMS.FAST_FSSP]<br>f) Adjust FFSSP time **Y/N**<br>g) If Y, enter value to add to data time (seconds) | | **Total glitches =**<br>**Sec file written ok?**<br>**Note calibration file used**<br>Yes only if gross errors occur in FFSSP time eg; ~ 1hour |
| 5) FLOODS> **WAVE**<br>a) WAVE> **write_procffssp_to_m5,'pmsdata:Bnnn_procffssp.dat', 'mfddata:Bnnn_mfdX','pmsdata:Bnnn_m5procffssp',/auto**<br>b) WAVE> **exit** | | Use PVWAVE for this section<br>**Note time correction applied to FFSSP by /auto =** |
| 6) FLOODS> **MODIFY**<br>a) Modifying datasets: **pmsdata:Bnnn_m5procffssp**<br>b) Dataset: **mfddata:Bnnn_mfdX**<br>c) New dataset: **mfddata:Bnnn_mfdY (y=x+1)**<br>d) Parameter description file: *leave blank to use default* | | **Input file size =**<br>**M5 output file size =** |
| 7) CHECKS:<br>i). Are FFSSP and JW/Nevzorov LWC synchronized in time?<br>*In flight_plot, parameters*<br>*JW LWC para 535*<br>*Nevzorov LWC para 602*<br>*FFSSP LWC para 1202*<br>ii). If not, repeat from step 5b replacing /auto with **addt=x** which adds x+20 secs to FFSSP time. | | **Synchronized?** |

# CLOUD PHYSICS PROCESSING LOG

**Flight number:** **B398**
**Date of Flight:** 11/09/08

| **B) 2D PROCESSING** | | REPROCESS +1hr |
|---|---|---|
| Processing Stage | Done? | Comments |
| 1) Transfer Bnnn.dat file from CD/DVD to PC | Y | |
| 2) Zip up file on PC (Bnnn.zip) | Y | |
| 3) FTP the zipped file (binary) from the PC to the directory SEADAS_DATA:[SEADAS_DATA] on FLOODS | Y | 12390 blocks |
| 4) Log on to FLOODS | | |
| 5) Unzip SEADAS_DATA:[SEADAS_DATA]Bnnn.zip | Y | **Size of Bnnn.dat = 153128** |
| 6) FLOODS> **WAVE**<br>WAVE> **CONVERT_SEADAS_FILE**<br>a) Input file: **SEADAS_DATA:[SEADAS_DATA]Bnnn.dat**<br>b) Output file:<br>**SEADAS_DATA:[SEADAS_DATA]Bnnn_seadas.dat**<br>WAVE> **exit** | Y | Use PVWAVE for this section<br>**Blocks read = 27261**<br>**Blocks written = 27261**<br><br>**Bad reads = 0** |
| 7) FLOODS> **RUN MRFB:[PMS.SEADAS]READM200_FILE**<br>a) Default directory: **PMSDATA:**<br>b) Flight number: **Bnnn**<br>c) Disk file name:<br>**SEADAS_DATA:[SEADAS_DATA]Bnnn_seadas.dat**<br>d) Comment string:<br>e) Start time: *0 if unknown (T/O – 5 min)*<br>f) End time: *240000 if unknown (Land + 5 min)*<br>g) Read 2DC: **Y**<br>h) Read 2DP: **Y**<br>i) Secondary data: **Y**<br><br>j) FSP-SYNC: **Y**<br>k) cmd.str: **Y**<br>l) Auto time correction: **N**<br>m) Full length secondary:**N** | Y | **Start = 075000**<br>**End = 095000**<br>Ignore error message scroll (vestigial error from tapes)<br><br>**Are FRW, FSP, IMB, PCA,SEC files in PMSDATA? Y**<br>**Are they non-zero in size? Y** |
| 8) FLOODS> **WAVE**<br>i). WAVE> **imagedisplay**<br>a) 2D directory name: **PMSDATA:**<br>b) Flight number: **Bnnn**<br>c) File generation no: **0**<br>d) Time from IWC plot: **N**<br>e) Select probe: (**1**) 2DC (**2**) 2DP<br>f) Start time: *As in 7e above*<br>g) End time: *As in 7f above*<br>h) Time interval (sec): **5** recommended (0 for all images)<br>ii). WAVE> **auto_image**<br>a) 2D directory name: **PMSDATA:**<br>b) Flight number: **Bnnn**<br>c) Enter date: **YYYYMMDD**<br>d) Enter start time: *0 if unknown (T/O – 1 min)*<br>e) Enter end time: *240000 if unknown (Land – 1 min)*<br>f) Enter time interval (sec) between successive imaged blocks: **10**<br>iii). WAVE> **exit** to create files<br>iv). FTP ascii *.PS files from PMSDATA: to PC<br>v). Load each into Ghostview or other pdf-converter<br>vi). Output as pdf file (720 dpi resolution), appending name prefix of **CORE-CLOUD-PHY**_ to converted files | | 2D image display and printing<br>Must be done from FLOODS itself.<br><br><br><br><br>**Note any problems with images**<br>**2dc images ok.**<br>**2dp noisy – some images.**<br>Prepare imagery for Core data<br>From own PC again<br><br><br>**Start =**<br>**End =**<br><br><br>FAAM_YYYYMMDD_R0_ Bnnn_2Dx-images.ps<br>Notes on this in instructions<br>2dc 20 pages<br>2dp 59 pages |

| | | |
|---|---|---|
| 9) FLOODS> **RUN MRFB:[PMS.SPEC2D.AUTO]PROCESS2D_AUTO**<br>a) Flight number: **Bnnn**<br>b) Directory: **PMSDATA:**<br>c) File generation: *Hit enter*<br>d) Time correction: *Time offset of the 2D data*<br>e) TAS: **Y**<br>f) MFD directory: **MFDDATA:Bnnn_tas**<br>g) Probe number: (**1**) 2DC (**2**) 2DP (**0**) Both<br>*0 unless either probe known to be faulty*<br>h) Start time: *0 if unknown (T/O + 30sec)*<br>i) End time: *240000 if unknown (Land – 30sec)*<br>j) Nominal averaging: **0.2** seconds for conversion to M5<br>k) Particle type 2DC: **8** if known to be in ice cloud<br>**11** if known to be in water cloud<br>l) Particle type 2DP: **8** if known to be in mixed-phase<br>**8** if unknown<br>m) Coefficient choice: **2**<br>n) Output root filename: **PMSDATA:Bnnn_PROC2D** | Y | NB. an error message may appear, floating point exception, rerun and use time quoted in error message, repeat until successful.<br>**X = b398_tas**<br><br>**Start = 075000**<br>**End =** 095000<br><br>**Time data processed to =** 092441<br>**2dproc files present? Y**<br>*.2dc, *.2dp and *.dat |
| 10) FLOODS> **WAVE**<br>i) WAVE> **WRITE_PROC2D_TO_M5, 'PMSDATA:BNNN_PROC2D.DAT', 'PMSDATA:BNNN_M5PROC2D'**<br>ii). **exit** | Y | Use PVWAVE for this section<br><br>Error message about HDDR file should be ignored.<br>**Records = 2823** |
| 11) FLOODS> **MODIFY**<br>a) Modifying datasets: **pmsdata:Bnnn_m5proc2D**<br>b) Datset: **mfddata:Bnnn_tas**<br>c) New dataset: **mfddata:Bnnn_tas_2d**<br>d) Parameter description file: leave blank to use default | Y | <br><br>**X = b398_tas**<br>**Y = (X+1) = b398_tas_2d** |
| 12) CHECKS:<br>Are 2DC/2DP IWC of comparable magnitude and well-correlated with Nevzorov TWC?<br>*In flight_plot, parameters*<br>*Nevzerov TWC para 605*<br>*2DC IWC para 1302*<br>*2DP IWC para 1312* | N | **Use flight_plot to check data is present in mfd file? Y** |

# CLOUD PHYSICS PROCESSING LOG

**Flight number:** **B398**
**Date of Flight:** **11/09/08**

| C) PCASP PROCESSING | | |
|---|---|---|
| Processing Stage | Done? | Comments |
| 1) Complete stage 7) in 2D processing<br>Ensures Bnnn_FSP.DAT containing raw PCASP data is written to directory PMSDATA: | **Y** | |
| 2) FLOODS> **RUN MRFB:[PMS.PCASP]PROCPCASP_NEW**<br>a) Flight number: **Bnnn**<br>b) File name: **PMSDATA:Bnnn_FSP.DAT**<br>c) Root output name: **PMSDATA:Bnnn_PROCPCASP**<br>Produces PMSDATA:Bnnn_PROCPCASP.DAT (binary)<br>PMSDATA:Bnnn_PROCPCASP.OUT (ascii)<br>d) Minimum size channel: *default = 1*<br>*If smallest size channel are known to be noisy the value of the highest noise free channel to be entered here*<br>e) Calibration volume flow rate:<br>*Use the most recent value. (1.15ccs$^{-1}$ Feb 07)*<br>*Calibration files to be stored in **Exeter***<br>*Entering zero gives default value = 1.0 cm$^3$s$^{-1}$*<br>f) Time correction: *Same value as used in 2D processing stage 9d*<br>g) Start time: *0 if unknown*<br>h) End time: *240000 if unknown* | **Y** | **Min size =1**<br>**Vol flow rate =** 0.8 |
| 3) FLOODS> **WAVE**<br>i).WAVE> **write_procpcasp_to_m5, 'pmsdata:Bnnn_procpcasp.dat', 'pmsdata:Bnnn_m5procpcasp'**<br>ii). WAVE> **exit** | **Y** | Use PVWAVE for this section |
| 4) FLOODS> **MODIFY**<br>a) Modifying datasets: **pmsdata:Bnnn_m5procpcasp**<br>b) Dataset: **mfddata:Bnnn_tas_2d**<br>c) New dataset: **mfddata:Bnnn_tas_2d_pcasp**<br>d) Parameter description file: *leave blank to use default* | **Y** | **X = b398_tas_2d**<br>**Y = X+1 = _tas_2d_pcasp** |
| 5) CHECKS<br>Are PCASP and JW peaks synchronous?<br>*In flight_plot, parameters*<br>*Neph – total blue scatter.*<br>*PCASP conc para 1550* | **N** | **Is data present in mfd? Y**<br>Use flight_plot to check. |

# Flight: B398

**KEY**

- Not Fitted
- Fitted, Not Operated
- Duff Data
- Minor Problems
- OK

### Thermometers
- Cabin Temperature:
- Heimann:
- Deiced Temp:
- Non-deiced Temp:

### Hygrometers
- FWVS:
- Buck CR2:
- General Eastern:
- Johnson Williams:
- Nevzorov:
- Total Water Probe:

### Cameras
- Downward Facing:
- Forward Facing:
- Rearward Facing:
- Upward Facing:

### Navigation + Aircraft
- Cruciform GPS:
- GIN Applanix:
- INU Honeywell:
- Radar Altimeter:
- RVSM IAS:
- RVSM Static Pressure:
- XR5 GPS:

### Misc Core
- AMTG:
- AVAPS:
- Cabin Pressure:
- Fax machine:
- Printer:
- S9 Static Pressure:
- Satcom C:
- Satcom H:
- Turb Centre-Static:
- Turb Left Right:
- Turb Up-Down:
- Turb Horizontal Chk:
- Turb Vertical Chk:
- Weather Radar:

### DLUs:
- DLU AERACK:
- DLU BBR Lower:
- DLU BBR Upper:
- DLU Core Chem:
- DLU Core Consoles:
- DLU Port Aft:
- DLU Port Fwd:
- DLU Stbd Fwd:

### Radiometers
**Lower:**
- BBR (clear) Lower:
- BBR (IR) Lower:
- BBR (red) Lower:

**Upper:**
- BBR (clear) Upper:
- BBR (IR) Upper:
- BBR (red) Upper:

- ARIES:
- DEIMOS:
- IR Camera:
- JNO2 Lower:
- JNO2 Upper:
- JO1D Lower:
- JO1D Upper:
- MARSS:
- SHIMS Lower:
- SHIMS Upper:
- SWS:
- TAFTS:

### Cloud Probes
- 2DC:
- 2DP:
- FFSSP:
- PCASP:
- 2DS:
- ADA:
- CAPS:
- CCN:
- CDP (fuselage):
- CDP (Canister):
- CIP 100:
- CIP 25:
- CPI:
- CVI:
- SID1:
- SID2:

### Aerosol
- CPC 3025A:
- CPC 3786 H2O:
- Filters 47mm:
- Filters 90mm:
- Neph - Dry:
- Neph - Wet:
- PSAP:
- AMS:
- CPC 3025 (AMS):
- INC:
- VACC:
- CPC 3010A (CVI):
- SP2:
- UHSAS:

### Chemistry
- CO Aerolaser 5002:
- NOx TE42C:
- Ozone TE49C:
- Ozone TE49:
- SO2 TE43C:
- TDLAS (NIR) CH4:
- TDLAS (NIR) CO2:
- FAGE:
- Formaldehyde:
- NOx FAAM:
- NOxy:
- ORAC:
- PAN:
- PERCA:
- Peroxide:
- PTRMS:
- TDLAS (1C):
- WAS Bags:
- WAS Bottles:

### Misc Non-Core
- CASI/ATM:
- LIDAR:
- LTI:
- SAW Hygrometer:

**Report Created 11/12/2008 16:35:56**

**Last Updated:** 12/09/2008 14:28:09

# Faults / Incidents Log

**Flight No. B398**
**Date: 11/09/08**

Instruments

1.

Aircraft

ISDN Emails

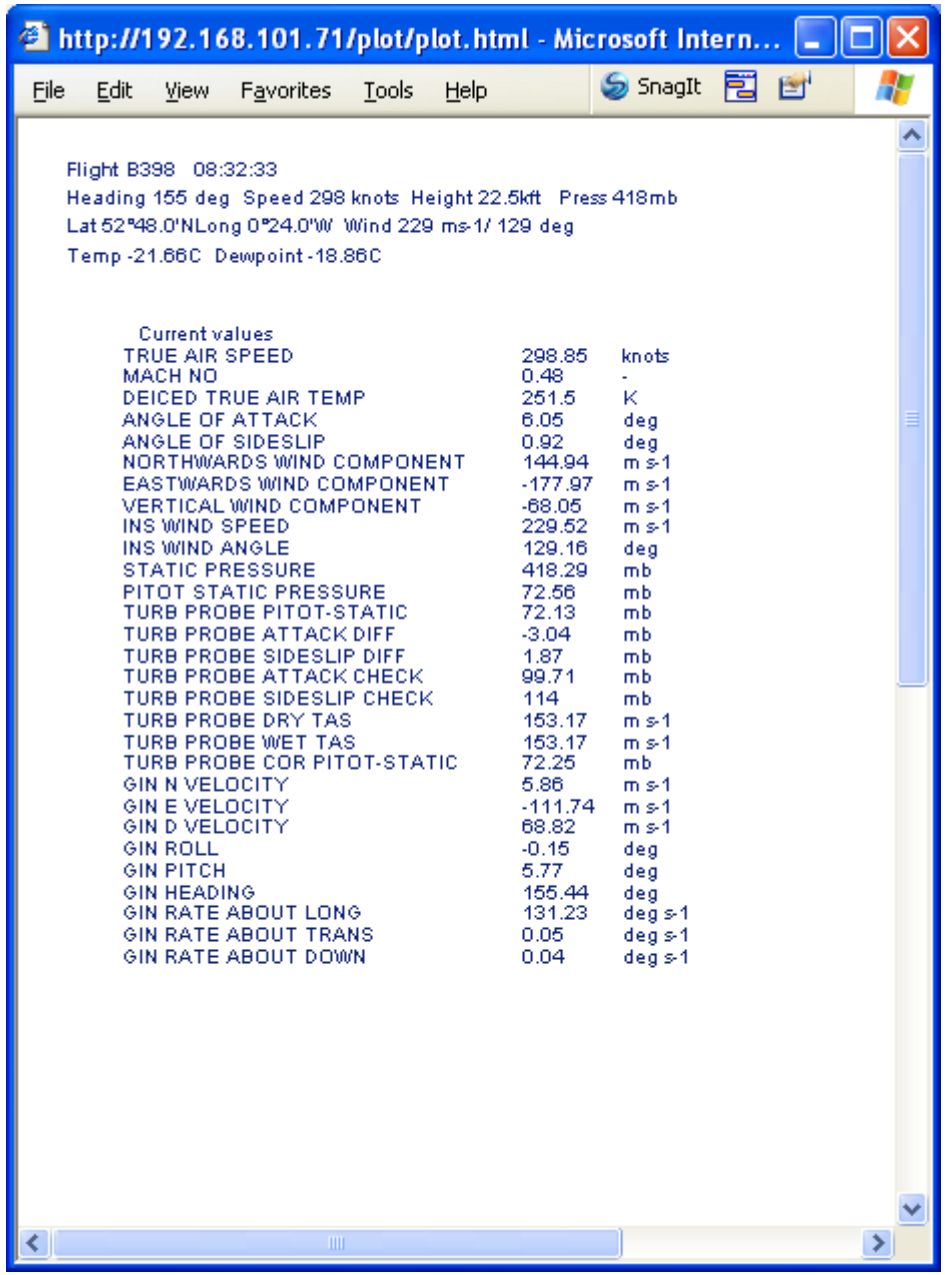
MPDS

Satcom-H Calls

Issues
Nil

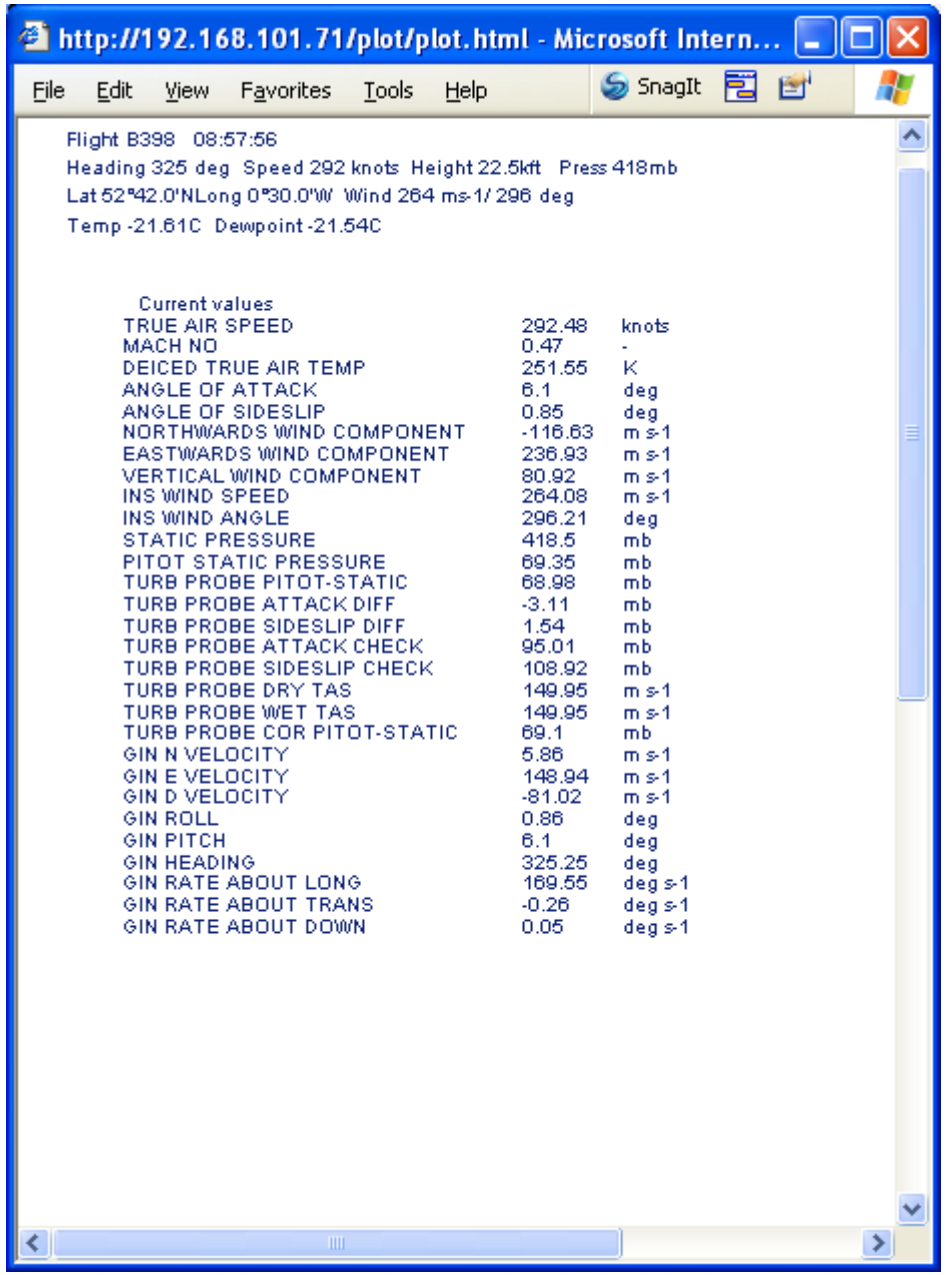
## Post Flight - Turb Probe Water Traps

1. Indicate Amount of Water: a) Nil b) 1-2 drops c) ¼ full or more d) Ice present
2. Emptied by:
3. Dried by




Flight B398 08:32:33
Heading 155 deg Speed 298 knots Height 22.5kft Press 418mb
Lat 52°48.0'N Long 0°24.0'W Wind 229 ms-1/ 129 deg
Temp -21.66C Dewpoint -18.86C

| Current values | | |
|---|---|---|
| TRUE AIR SPEED | 298.85 | knots |
| MACH NO | 0.48 | - |
| DEICED TRUE AIR TEMP | 251.5 | K |
| ANGLE OF ATTACK | 6.05 | deg |
| ANGLE OF SIDESLIP | 0.92 | deg |
| NORTHWARDS WIND COMPONENT | 144.94 | m s-1 |
| EASTWARDS WIND COMPONENT | -177.97 | m s-1 |
| VERTICAL WIND COMPONENT | -68.05 | m s-1 |
| INS WIND SPEED | 229.52 | m s-1 |
| INS WIND ANGLE | 129.16 | deg |
| STATIC PRESSURE | 418.29 | mb |
| PITOT STATIC PRESSURE | 72.56 | mb |
| TURB PROBE PITOT-STATIC | 72.13 | mb |
| TURB PROBE ATTACK DIFF | -3.04 | mb |
| TURB PROBE SIDESLIP DIFF | 1.87 | mb |
| TURB PROBE ATTACK CHECK | 99.71 | mb |
| TURB PROBE SIDESLIP CHECK | 114 | mb |
| TURB PROBE DRY TAS | 153.17 | m s-1 |
| TURB PROBE WET TAS | 153.17 | m s-1 |
| TURB PROBE COR PITOT-STATIC | 72.25 | mb |
| GIN N VELOCITY | 5.86 | m s-1 |
| GIN E VELOCITY | -111.74 | m s-1 |
| GIN D VELOCITY | 68.82 | m s-1 |
| GIN ROLL | -0.15 | deg |
| GIN PITCH | 5.77 | deg |
| GIN HEADING | 155.44 | deg |
| GIN RATE ABOUT LONG | 131.23 | deg s-1 |
| GIN RATE ABOUT TRANS | 0.05 | deg s-1 |
| GIN RATE ABOUT DOWN | 0.04 | deg s-1 |




Flight B398 08:57:56
Heading 325 deg Speed 292 knots Height 22.5kft Press 418mb
Lat 52°42.0'N Long 0°30.0'W Wind 264 ms-1/ 296 deg
Temp -21.61C Dewpoint -21.54C

| Current values | | |
|---|---|---|
| TRUE AIR SPEED | 292.48 | knots |
| MACH NO | 0.47 | - |
| DEICED TRUE AIR TEMP | 251.55 | K |
| ANGLE OF ATTACK | 6.1 | deg |
| ANGLE OF SIDESLIP | 0.85 | deg |
| NORTHWARDS WIND COMPONENT | -116.63 | m s-1 |
| EASTWARDS WIND COMPONENT | 236.93 | m s-1 |
| VERTICAL WIND COMPONENT | 80.92 | m s-1 |
| INS WIND SPEED | 264.08 | m s-1 |
| INS WIND ANGLE | 296.21 | deg |
| STATIC PRESSURE | 418.5 | mb |
| PITOT STATIC PRESSURE | 69.35 | mb |
| TURB PROBE PITOT-STATIC | 68.98 | mb |
| TURB PROBE ATTACK DIFF | -3.11 | mb |
| TURB PROBE SIDESLIP DIFF | 1.54 | mb |
| TURB PROBE ATTACK CHECK | 95.01 | mb |
| TURB PROBE SIDESLIP CHECK | 108.92 | mb |
| TURB PROBE DRY TAS | 149.95 | m s-1 |
| TURB PROBE WET TAS | 149.95 | m s-1 |
| TURB PROBE COR PITOT-STATIC | 69.1 | mb |
| GIN N VELOCITY | 5.86 | m s-1 |
| GIN E VELOCITY | 148.94 | m s-1 |
| GIN D VELOCITY | -81.02 | m s-1 |
| GIN ROLL | 0.86 | deg |
| GIN PITCH | 6.1 | deg |
| GIN HEADING | 325.25 | deg |
| GIN RATE ABOUT LONG | 169.55 | deg s-1 |
| GIN RATE ABOUT TRANS | -0.26 | deg s-1 |
| GIN RATE ABOUT DOWN | 0.05 | deg s-1 |

## MISSING LOG SHEETS:

The following log sheets are not available for flight B398:

| Log | Reason |
|---|---|
| Pre-flighter log | No log available |
| Cloud Physics In Flight | There appears to be only a blank log for this flight so not included |
| 2D-S / CAPS / SP2 / CPI | 2D-S / CAPS / SP2 / CPI operator does not create a log sheet |
| | |

**AMS - not yet fitted**

**Document control**

| Revision | Date | Author | Comments |
|---|---|---|---|
| r0 | 08 Sep 2009 | Doug Anderson | Initial version missing the above noted logs |
| r1 | | | |
| r2 | | | |

## VIDEO RECORDINGS:

The following video recordings in avi format should be available at the BADC :

faam-video-dfc_faam_20080911_r0_b398_080558_1hz.avi
faam-video-dfc_faam_20080911_r0_b398_090558_1hz.avi

faam-video-rfc_faam_20080911_r0_b398_080605_1hz.avi
faam-video-rfc_faam_20080911_r0_b398_090605_1hz.avi

faam-video-ffc_faam_20080911_r0_b398_080608_1hz.avi
faam-video-ffc_faam_20080911_r0_b398_090608_1hz.avi

faam-video-ufc_faam_20080911_r0_b398_080602_1hz.avi
faam-video-ufc_faam_20080911_r0_b398_090602_1hz.avi

No Digital8 video recordings were made on this flight.